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ANNUAL REPORTS
OF THE
NEW MEXICO
College of Agriculture
AND
Mechanic Arts
AND
Agricultural Experiment Station

COMPRISING THE
Twelfth Annual Report under the Territorial
Act, the Twelfth Annual Report of the Agri-
cultural Experiment Station and the Eleventh
Annual Report under the Morrill Act. ❀❀❀

SANTA FE, N. M.:
NEW MEXICAN PRINTING COMPANY.
1902.

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TABLE OF CONTENTS

TERRITORIAL REPORT

	PAGE
Regents' Report.....	5
Report of the Executive Officer in Charge.....	8
Increased Enrolment.....	8
Crowded Boarding Accommodations.....	9
New Short Courses.....	10
College Library.....	11
Exhibits by College and Station.....	11
Advertising the College.....	12
Bringing the College in Touch with the People.....	12
List of Students.....	13
Treasurer's Report.....	17

EXPERIMENT STATION REPORT

Regents' Report.....	21
Report of the Executive Officer in Charge.....	21
List of Bulletins.....	24
List of Periodicals.....	26
Report of the Agriculturist.....	27
Report of the Horticulturist.....	29
Report of the Chemist.....	35
Report of the Botanist.....	36
Report of the Soil Physicist and Meteorologist.....	37
Report of the Consulting Entomologist.....	40
Treasurer's Report.....	40

MORRILL FUND REPORTS

Report of the President of the College.....	42
Report of the Treasurer.....	45

TERRITORIAL REPORT

FOR

1900-1901.

REGENTS' REPORT

November 30, 1901.

To the Hon. M. A. Otero, Governor of New Mexico:

SIR:—In accordance with Section 3, of Chapter XCVIII of the Acts of the Thirty-fourth Legislative Assembly of New Mexico, approved March 21, 1901, the regents of the New Mexico College of Agriculture and Mechanic Arts respectfully submit the following report, being the twelfth annual report of the afore-mentioned institution, and embodying the reports of the executive officer in charge of the college, and of the treasurer of the board.

Since our last report, several changes have been made in this board of regents. Regent Prisciliano Moreno, whose name was not sent for confirmation to the last legislative assembly, was succeeded by Regent H. B. Holt of Las Cruces, who was appointed by your Excellency. Regent A. A. Jones of Las Vegas, whose term expired in September of this year, was succeeded by Seaman Field of Deming, who was appointed to fill the vacancy. The board as at present constituted is as follows: L. Bradford Prince, of Santa Fe, president of the board, whose term expires in 1904; Phillip H. Curran, of Las Cruces, secretary and treasurer of the board, whose term expires in 1902; G. A. Richardson, of Roswell, whose term expires in 1905; Herbert B. Holt, of Las Cruces, whose term expires in 1903; Seaman Field, of Deming, whose term expires in 1906; Miguel A. Otero, Governor, Santa Fe, *ex-officio*; and J. Francisco Chavez, Supt. Public Instruction, Santa Fe, *ex-officio*.

Since our last report to you several changes have been

made in the officers of the college and experiment station. The president of the college and director of the experiment station, Frederick W. Sanders, was not re-elected by this board upon the conclusion of his term of office ending June 30, 1901. Prof. Clinton D. Smith of Michigan, was elected president of the college and director of the station early in July, but, to the surprise of this board, declined the position. Following his declination, the board requested Francis E. Lester, registrar of the institution, to serve as executive officer in charge until the election of a president. On November 21, 1901, the board unanimously elected Prof. Luther Foster, of the University of Wyoming, as president of the college and director of the station, to take charge of the duties of this position on Dec. 1st, 1901. Other changes in the officers of the institution have been the election of D. M. Richards of Gallup, New Mexico, as principal of the preparatory department to succeed R. R. Larkin; Miss Edith M. Davis, of Topeka, Kansas, to succeed F. F. Barker as professor of rhetoric and literature, Prof. Barker having declined to perform the duties of his position after Sept. 1st of the present year; and Miss F. E. Blakesley to succeed Miss F. G. Thornton as assistant in the preparatory department. The board, with a view to economy, abolished the position of assistant in the department of physics, geology and botany, and the second assistantship in the department of chemistry. Miss Mittie Griffin of Roswell, New Mexico, was elected by this board as teacher of music for the present scholastic year. Prof. T. D. A. Cockerell, formerly professor of entomology in this institution, is no longer connected with this college or experiment station, nor is Mr. W. M. Reed of Roswell, New Mexico. The present officers of the college and station are as follows: Francis E. Lester, executive officer in charge; Clarence T. Hagerty, M. S., professor of mathematics and astronomy; Arthur Goss, M. S., professor of chemistry; Frank W. Brady, M. E., professor of mechanical engineering and superintendent of buildings; Hiram Hadley, A. M., professor of history and philosophy; Elmer O. Wooton, A. M.,

professor of biology and in charge of geology and physics; Edith M. Davis, B. A., professor of rhetoric and literature; John Dabney Tinsley, B. S., professor of soil physics; Alice Horning, B. S., professor of domestic economy, dean of women, and matron of women's hall; J. J. Vernon, B. S., Agr. professor of agriculture and horticulture and superintendent of grounds; Raleigh Frederick Hare, M. S., assistant professor of chemistry; Fabian Garcia, B. S., assistant professor of horticulture; Charles Mills, assistant professor of mechanical engineering; D. M. Richards, A. B., principal of preparatory department; Wm. Alexander Sutherland, B. S., instructor in Spanish and Latin; Geraldine Combs, assistant in preparatory department; Helen Mar Macgregor, assistant in stenography department, and college stenographer; Archie Bruce Sage, B. S., assistant in mechanical engineering department; Charlotte A. Baker, librarian and assistant in English; Lavinia Lea Brown, assistant in preparatory department; Fannie Elizabeth Blakesley, B. L., assistant in preparatory department.

From the report of the treasurer which accompanies this report, it will be seen that the financial condition of the college is satisfactory. It is, however, an exceedingly difficult matter to so limit the legitimate expenses of the institution which can not be paid from any other funds by the college or station as to keep them within the small appropriation made for this institution by the territorial legislature. In view of the increased enrollment and consequent increased running expenses, it is very important that the institution should receive the proper support from legislative appropriations. It is to be regretted that the last legislature did not see fit to increase the annual appropriation, as was done in the case of several other territorial institutions.

It is hoped that the proceeds of the bond issue authorized by the last legislature will be available before a great length of time. The welfare and development of the college demand that the institution receive the intended benefits of this bond issue at as early a date as practicable.

We desire to call attention to the subjoined report of the executive officer of the college. We feel that the institution is at present in a more prosperous condition than at any time in its past history. From the present satisfactory condition, and from the fact that we believe the incoming president is a man of ability and peculiar fitness for the work of up-building the college, we feel that the prospect for the future of the institution is unusually bright.

Respectfully submitted for the board of regents,

L. BRADFORD PRINCE, President.

P. H. CURRAN, Secretary and Treasurer.

REPORT OF THE EXECUTIVE OFFICER IN CHARGE

November 30, 1901.

To the Board of Regents of the New Mexico College of Agriculture and Mechanic Arts:

GENTLEMEN: In accordance with authority and instructions given by your board at its meeting held on the 21st inst., I take pleasure in submitting a report concerning this institution for the year closing today, being the twelfth year of the existence of the college.

The college year closing June 30, 1901, was, in many respects, a successful one for the institution. The enrollment of students was somewhat less than the previous year. The work done by the students of the institution during that year was of a satisfactory character. Four students were graduated on June 5th, at the close of the year, as follows: Leah Nora Newberry, Minnie Wilson Newberry, Alfred Marcos Sanchez and Matthew Steel, this being the eighth class to be graduated from the college, and bringing the number of its alumni to a total of thirty-two.

Increased Enrolment

Special efforts were put forth during the vacation period between the close of the last collegiate year and the opening of the present one in September, to bring the work of this institution to the attention of the citizens of our territory and the public generally with a view to increasing the enrollment.

An appropriation having been made by your board for the purpose, literature of a popular character was sent to every taxpayer in the territory and to many others. A very large amount of correspondence was carried on during the months of July and August with prospective students and others. The results have been eminently satisfactory. The present collegiate year has opened with an enrollment of students about twenty-five per cent greater than the enrollment at the same time in any previous year. The present total enrollment of students in the institution is 207. A complete list showing the name, age, residence and grade of each student is appended to this report in accordance with the requirements of law. The enrollment of students for the present year will receive material additions to this list by a large number of students who contemplate matriculating within the next few months.

Crowded Boarding Accommodations

To accommodate the increased number of students it was found necessary to enlarge the boarding accommodations for young men students in the club house, which is maintained close to the college. Your board having made the necessary financial arrangements, four additional two-roomed frame buildings were erected as a part of the buildings of the club house. This additional accommodation was barely sufficient to meet the demands, and at the present writing the club house is entirely full. Moreover, the accommodations provided for young women students at Women's Hall have been taxed to their limit. We have had applications for room and board in that building which we have not been able to grant. There is need of additional accommodations for both young men and young women students; and if the enrolment in future years increases as it appears probable, this need will become, within another year, a most pressing one.

The New Short Courses

The results that have come from the adoption of additional short courses in this institution have been very pleasing. Your board, during the past summer, authorized the adoption

of the following additional short courses: A two years' course in agriculture, a twelve weeks' course in agriculture and horticulture, and a two years' course in practical mechanics. These short courses, together with the short courses formerly provided of one year each in English stenography and Spanish stenography, appear to meet a popular and extensive demand. There are a large number of young men and young women who are unable to give the time or the money to taking a full four years' college course. By offering short courses in various lines of work, many young people are attracted to the institution who would, otherwise, not enter it at all. Moreover, the short courses, properly managed, may become feeders for the longer courses since many students taking up short course work become more fully alive to their needs and the benefits of taking a full collegiate course.

Whilst the number of students who have entered during the present year to take work in the short courses in agriculture and horticulture is small, the enrollment in the short course in practical mechanics is very encouraging and of a class to warrant the belief that this course is destined to become one of the most popular and important. I would call particular attention to the number and standing of students taking work in the stenography department. Students in this department are in attendance from twelve different states and territories. The fact that this institution was the pioneer in taking up the work of training stenographers in both English and Spanish has been one of the strongest factors in advertising the institution as a whole, and in gaining for it a reputation for good work in a special and important line of work. It is probably true that no other institution in the country affords better chances for work in either the Spanish language or Spanish stenography than this college, and it would seem to be to the best interests of this institution to make these facts widely known. The students taking work in these branches are uniformly of mature age, of good standing and of a kind who are taking the work in order to adapt it to the practical needs of life.

The College Library

One of the departments of the institution that your board has very wisely built up during the past year or two is the college library. Thanks to the liberal appropriations, that, during the past two years, have been made for the acquisition of additions to the library, it is rapidly growing in size and is now undoubtedly one of the best libraries in the southwest. The total number of volumes in the library is in the neighborhood of ten thousand, excluding some six thousand pamphlets. Moreover, the selection of the works contained in the library has been made with much care and thought. The library has been brought into excellent condition under the direction of a trained librarian whose experience has been of a character to carry out this work along the most approved lines. Such a library as this, properly catalogued, classified and managed, and made attractive as it is to those who use it, is of inestimable value to the students of the institution.

Exhibits by the College and Station

During the past year the institution has made comprehensive and attractive exhibits of its work and methods during the El Paso Carnival held in El Paso, Texas, in January, and during the Territorial Fair held in Albuquerque, New Mexico, in October of the present year. These exhibits have done much to bring the work of the institution before the attention of the people of the territory. They make an impression that is more forceful and more lasting than that secured by the ordinary distribution of printed matter. On both the above occasions large numbers of our citizens, as well as people from more distant points, saw the work being done by the institution and were brought into touch with its practical methods in a manner to impress them most favorably. The Chamber of Commerce at El Paso, Texas, and the Territorial Fair Association at Albuquerque, extended courtesies in connection with the making these exhibits that deserve to be, and have been, gratefully acknowledged.

Advertising the College

During the past year the college has been advertised in

many ways more extensively than ever before. Apart from the distribution of the official literature of the institution, which has been made more extensive in character than formerly, a large correspondence for the press of the territory has been carried on. The matter that has been published by the press of the territory during the past year, consisting of college news notes and items about the institution of a popular character, would fill not less than two hundred columns of newspaper space. Additional to this, the experiment station has undertaken the publication of regular press bulletins, issued to the newspapers of the territory every week or two, and treating of timely and popular questions. Acknowledgment is due to the editors of our territorial and local newspapers for the kindly manner in which they have cooperated with the work of this institution by publishing this matter.

Bringing the College in Touch With the People

It is still a fact to be regretted that there are citizens in our territory who know little, if anything, of the work of this institution. When it is considered that of all the territorial institutions this is pre-eminently *the people's* higher educational institution, it is easy to understand the importance of bringing the work of the college before the attention of the citizens of our territory. The advertising work of the past few months has been done with this object in view, and it is earnestly hoped and believed that the near future will see the importance and work of this college brought still more forcibly to the attention of the public generally by all possible and legitimate means. The well equipped departments, the strong and able force of instructors and the practical character of the work done by this college, are such as to command the esteem and good will of the people of New Mexico generally. It needs but a better understanding of the actual facts and of what the institution is doing for our young people, in order to secure this esteem and confidence, and so bring the institution into its highest sphere of usefulness.

Respectfully submitted,

FRANCIS E. LESTER,
Executive Officer in Charge.

LIST OF STUDENTS

Nov. 30, 1901

NAME	AGE	RESIDENCE	GRADE
Aldrich, Ray Kent.....	17	Gallup, N. M..	Prep.
Alleman, Herbert Nagley	16	Chihuahua, Mex..	Prep.
Angel, Ygnacio	19	Bosque Seco, N. M..	Prep.
Ascarate, Nemecia	15	Las Cruces, " ..	Prep.
Baca, Ricardo Hernandez	21	Chihuahua, Mex..	Sten.
Baird, Wallace	20	El Paso, Tex..	Col.
Baker, Stuart Knight	12	Las Cruces, N. M..	Prep.
Barela, Vencaslas P.	19	Hatch, " ..	Sp. Prep.
Bennett, Theron Catlin.....	20	Pierce City, Mo..	Col.
Blinn, Mary	15	Kelly, N. M..	Prep.
Brown, Lottie Belle	17	Deming, " ..	Prep.
Bloodgood, Dean Ward Actly ..	17	Kingston, " ..	Pr. Mech.
Bouts, John William	20	Topeka, Kas..	Prep.
Brown, John Maughs	17	Belmont, Calif..	Col.
Brunner, George	17	El Paso, Tex..	Col.
Caden, Arthur Brooke.....	30	New York City	Sten.
Calderon, Raphael.....	20	Chihuahua, Mex..	Sten.
Caldwell, George Robertson..	17	Mesilla, N. M..	Prep.
Carrera, Emile Philo	16	Las Cruces, " ..	Prep.
Carrera, Theodorlinda.....	17	Las Cruces, " ..	Prep.
Chaves, Abraham	17	Monticello, " ..	Prep.
Chaves, Eduardo	19	Monticello, " ..	Sp. Prep.
Chaves, Manuel Ramon	19	Mesilla, " ..	Prep.
Clancy, Carlos Cornelius	16	Puerta de Luna, " ..	Sten.
Coleman, Daniel Ransom....	17	Mesilla Park, " ..	Prep.
Coleman, Elizabeth	20	Mesilla Park, " ..	Col.
Coleman, Ruth	18	Mesilla Park, " ..	Col.
Connolly, Robert Emmett....	17	Deming, " ..	Pr. Mech.
Cook, Thomas Edward	17	Lordsburg, " ..	Pr. Mech.
Crosby, William	16	El Paso, Tex..	Col.
Danburg, Walter Malcolm ..	21	Las Cruces, N. M..	Sten.
Davis, Laura L.....	20	Herndon, Va..	Sten.
Deemer, Dixon Finch	12	Sierra Mojada, Mex..	Prep.
Deemer, Phyllis Barbour....	16	Sierra Mojada, " ..	Prep.
Deemer, Ralph Barbour	16	Sierra Mojada, " ..	Prep.
Dessauer, Phillip Edward ...	13	Las Cruces, N. M..	Prep.
Dessauer, Numa Raymond ..	11	Las Cruces, " ..	Prep.
Dennis, Florence	41	Chicago, Ill..	Sp. Sten.
Disinger, George Harry	14	Hillsboro, N. M..	Prep.
Eldridge, Elizabeth	18	Gallup, " ..	Col.
Elliott, Richard Henry	13	Cambray, " ..	Prep.
Evans, Flora Lucile	17	Ysleta, Tex..	Prep.
Evrist, Charles E	22	Los Angeles, Calif..	Sp. Sten.
Exter, Simeon	13	Rosedale, N. M..	Prep.
Finney, Ray Arlington	15	San Marcial, " ..	Sen. Prep.
Flint, Henry Phillips	19	Otero County	Sp. Sten.
Flint, Nigel Campbell	18	Las Cruces, N. M..	Sten.
Fielder, Herbert Austin.....	18	Silver City, " ..	Sten.

LIST OF STUDENTS—Continued

Nov. 30, 1901

NAME	AGE	RESIDENCE	GRADE
Ford, Alice Bessie.....	13	Las Cruces, N. M..	Prep.
Ford, Annis Bell... ..	16	Las Cruces, " ..	Col.
Ford, Fannie	19	Las Cruces, " ..	Col.
Ford, Lela Ray.....	15	Las Cruces, " ..	Prep.
Foster, Ethel	17	Las Cruces, " ..	Prep.
Foster, Florence.....	19	Las Cruces, " ..	Col.
Fountain, Albert J.....	16	Mesilla, " ..	Prep.
Fountain, Catherine Mary...	17	Mesilla, " ..	Sten.
Fraide, Agnes	17	Las Cruces, " ..	Sp. Prep.
Fraide, Berardo.....	24	Las Cruces, " ..	Prep.
Freeman, John Jewell	16	Anthony, " ..	Prep.
French, Fannie	18	Las Cruces, " ..	Col.
Frietz, George.....	20	Mesilla, " ..	Prep.
Gamboa, George.....	21	Mesilla, " ..	Special
Garrett, Dudley Poe	18	Las Cruces, " ..	Prep.
Garza, Francisco	15	Marathon, Tex...	Prep.
Gilliam, Rexie Emmett	17	Earlham, N. M..	Prep.
Gilmore, Matt	20	Angus, " ..	Pr. Mech.
Goebel, Walter Emile	18	Belen, " ..	Pr. Mech.
Goebel, William Curt	13	Belen, " ..	Prep.
Gonzales, Alejandro.	18	Mapimi, Durango, Mex	Pr. Mech.
Gonzales, Jesus.....	15	Mesilla Park, N. M..	Prep.
Gonzales, Merced.....	16	Las Cruces, " ..	Sp. Prep.
Goodin, Frank Marion	18	White Oaks, " ..	Pr. Mech.
Graham, Allen Givens.....	13	Magdalena, " ..	Prep.
Graham, Earl Addison	16	Magdalena, " ..	Prep.
Green, Edward Eleazer	16	El Paso, Tex...	Sp. Prep.
Griffin, John B	18	Carlsbad, N. M..	Sten.
Guerra, Juan.....	14	Mesilla, N. M..	Sp. Prep.
Hammond, Laura Virginia ..	15	Gap Creek, Tenn..	Prep.
Harney, Annetta May	16	Cerrillos, N. M..	Col.
Harper, Dora.....	16	Clifton, Ariz..	Prep.
Hart, Gustavus Edward	36	San Francisco, Calif..	Sp. Sten.
Hart, Reginald Henry	18	El Paso, Tex..	Col.
Hatton, Thurman Timbrook ..	13	Las Cruces, N. M..	Prep.
Herrera, Louis	17	Las Cruces, " ..	Prep.
Hitchcock, James Ebenezer ..	14	San Marcial, " ..	Prep.
Hodgdon, Mary Blanchard ..	18	Deming, " ..	Col.
Horton, George Aaron	22	Auburn, N. Y..	Sp. Sten.
Hostetter, Hazel	13	Las Cruces, N. M..	Prep.
Hostetter, Cecil.....	14	Las Cruces, " ..	Prep.
Howard, George Volney	21	Santa Fe, " ..	Sp. Sten.
Howell, Edith Lucy	15	Santa Rita, " ..	Sp. Prep.
Hubbard, Edith Luzette.....	17	Marfa, Tex..	Sten.
Hubbard, Harry Jenkins	19	Marfa, " ..	Col.
Hughes, Adelaide Margaret ..	18	Washington, D. C..	Sten.
Hughes, John David.....	18	Albuquerque, N. M..	Pr. Mech.
Isaacks, Coila Nancy.....	16	Las Cruces, " ..	Prep.

LIST OF STUDENTS—Continued

Nov. 30, 1901

NAME	AGE	RESIDENCE	GRADE
Isaacks, William Frederick..	17	Las Cruces, N. M..	Prep.
Jacoby, Clara	22	Las Cruces, " ..	Col.
Jacoby, Lydia.....	20	Las Cruces, " ..	Col.
Jacquot, Walter.....	16	Springer, " ..	Pr. Mech.
Jaramillo, Abel.....	21	Belen, " ..	Sp. Prep.
Jaramillo, Manuel R.....	16	Monticello, " ..	Sp. Prep.
Jennings, Harry Lee.....	28	Lordsburg, " ..	Pr. Mech.
Johnson, Jean Refuighita....	21	Mesilla Park, " ..	Sten.
Kimber, Fleta.....	14	Mesilla Park, " ..	Prep.
Lane, John B.....	22	White Oaks, " ..	Sp. Col.
Lapoint, Willie Pierre.....	16	Las Cruces, " ..	Prep.
Lara, Jesus.....	19	Las Cruces, " ..	Sp. Prep.
Larrazola, John Baptiste....	18	Las Vegas, " ..	Col.
Lewis, Florence.....	14	Gallup, " ..	Prep.
Llewellyn, Gladys	17	Las Cruces, " ..	Prep.
Llewellyn, Ida May.....	16	Las Cruces, " ..	Prep.
Llewellyn, Jr., W. H. H.....	14	Las Cruces, " ..	Prep.
Lockwood, Kent	15	Victor, Colo..	Prep.
Lowe, Lawson David	17	Las Cruces, N. M..	Sp. Sten.
Lucero, Francisco	14	Las Cruces, " ..	Prep.
Lucero, Miguel	17	Mesilla, " ..	Prep.
Luna, Carlota	19	Las Cruces, " ..	Sp. Prep.
Macgregor, James Stanislaus	19	Mesilla Park, " ..	Col.
Mackedon, Edward Josiah....	16	San Pedro, " ..	Prep.
Medina, Joaquin.....	15	Clifton, Ariz..	Sp. Prep.
Medina, Juan.....	11	Clifton, " ..	Sp. Prep.
Medina, Ralph.....	13	Clifton, " ..	Sp. Prep.
Mejia, Albino.....	19	Solomonville, " ..	Sp. Sten.
Mestas, Solomon A	22	Clayton, N. M..	Sp. Col.
Metcalfe, Mary Thomas.....	40	Mangus Springs, " ..	Col.
Metcalfe, Orrick Baylor	22	Mangus Springs, " ..	Col.
Metcalfe, Robert James.....	25	Mangus Springs, " ..	Col.
Miller, Bernard.....	18	Cliff, " ..	Pr. Mech.
Miller, Edwin Wright.....	11	Organ, " ..	Prep.
Miller, Walter Lucas.....	18	Santa Fe, " ..	Sp. Col.
Mordy, Isabelle.....	19	Las Cruces, " ..	Col.
Mordy, Jessie Laura.....	13	Las Cruces, " ..	Prep.
Morrison, Robert Logan.....	13	Prescott, Ariz..	Prep.
Mott, Rowena.....	17	Las Cruces, N. M..	Col.
Moseley, Alexander Jackson.	20	Union Springs, Ala..	Sten.
McConnell, Harry Charles....	15	Toronto, Can..	Prep.
McFie, Maude Elizabeth.....	21	Santa Fe, N. M..	Col.
McLean, William.....	14	Clifton, Ariz..	Prep.
Nabours, Benjamin Franklin	19	White Oaks, N. M..	Col.
Nabours, Bessie Lucile.....	16	White Oaks, " ..	Prep.
Nabours, Myrtle Vance.....	14	White Oaks, " ..	Prep.
Nattress, Charles H.....	17	San Marcial, " ..	Prep.
Neal, Homer Herbert	17	Mesilla Park, " ..	Prep.

LIST OF STUDENTS—Continued

Nov. 30, 1901

NAME	AGE	RESIDENCE	GRADE
Nevares, Jesus F.....	18	Las Cruces, N. M..	Prep.
Newberry, Henry Clay.....	18	Las Cruces, " ..	Col.
Newcomb, Mrs. Abbe.....	45	Las Cruces, " ..	Special
Newcomb, Alice Juanita.....	13	Las Cruces, " ..	Prep.
Newcomb, Elizabeth Simone.	15	Las Cruces, " ..	Col.
Newlin, Roy.....	21	Bloomington, Ind..	Sp. Col.
Newton, Fred Nevarra.....	17	Earlham, N. M..	Prep.
Newton, Nellie Olena.....	19	Earlham, " ..	Sten.
Norero, Edward.....	16	Swartz, " ..	Sp. Prep.
Nuanez, Ignatius.....	21	Monticello, " ..	Sp. Prep.
Olinger, Robert Wallace.....	16	Mesilla Park, " ..	Pr. Mech.
Opgenorth, Henry.....	15	Hillsboro, " ..	Prep.
Payne, Chester.....	17	Austin, Ark..	Prep.
Pearson, Trust.....	15	Lordsburg, N. M..	Prep.
Pelphrey, William.....	20	Alamogordo, " ..	Prep.
Pinones, Gabriel.....	16	Mesilla, " ..	Prep.
Piper, Edward G.....	22	El Paso, Tex..	Sp. Col.
Poe, James Ralph.....	16	Mesilla Park, N. M..	Prep.
Poe, Oscar Leroy.....	21	Mesilla Park, " ..	Col.
Post, Charles Lewis.....	27	Mesilla Park, " ..	P. G. Col.
Quintero, Jose.....	15	Mesilla, " ..	Prep.
Quintero, Fernando.....	17	Mesilla, " ..	Prep.
Ramirez, Juan.....	17	Las Cruces, " ..	Prep.
Ramirez, Rafael.....	19	Las Cruces, " ..	Col.
Rederich, J. E.....	31	Kansas, " ..	Sp. Agric.
Reza, Adolpho.....	16	Las Cruces, " ..	Prep.
Roberts, Guy Malcolm.....	17	Trenton, Mo..	Prep.
Rouault, Ernest Joseph.....	17	Las Cruces, N. M..	Prep.
Rouault, Jr., Theodore.....	20	Las Cruces, " ..	Sten.
Salmon, Frances.....	18	San Antonio, Tex..	Prep.
Sampson, Irving Wilbur....	16	Las Cruces, N. M..	Prep.
Sanchez, Alfredo Marcos....	21	Mesilla, " ..	P. G. Col.
Sanchez, Demetrio.....	17	Tome, " ..	Prep.
Sanchez, Salvador.....	20	Monticello, " ..	Prep.
Saucedo, Jose Maria.....	19	Las Cruces, " ..	Prep.
Scoggins, Beulah.....	18	Mesilla Park, " ..	Prep.
Scoggins, Clifford Oberia...	15	Mesilla Park, " ..	Prep.
Sells, George Beard.....	14	Las Cruces, " ..	Prep.
Shaw, Maymie Elizabeth.....	17	San Marcial, " ..	Col.
Shaw, Rena.....	15	San Marcial, " ..	Prep.
Skidmore, Frank Lallie.....	14	Las Cruces, " ..	Prep.
Smith, David Fray.....	21	Nogal, " ..	Prep.
Snow, Robert Carl.....	19	Tiptonville, Tenn..	Col.
Stanley, Alice.....	27	Lansing, Mich..	Sp. Sten.
Steel, James Alexander.....	13	Las Cruces, N. M..	Prep.
Steel, Matthew.....	22	Las Cruces, " ..	P. G. Col.
Stewart, Herbert Clyde.....	14	Mesilla Park, " ..	Prep.
Stinnett, Russell Tamah.....	27	Bells, Va..	Col.

LIST OF STUDENTS—Continued

Nov. 30, 1901

NAME	AGE	RESIDENCE	GRADE
Stoneking, Jay Benton	14	Kelly, N. M..	Prep.
Sweet, Jacob Allen	15	Mesilla Park, " ..	Prep.
Terres, Donaciano.....	16	Las Cruces, " ..	Prep.
Trujillo, Candido.....	14	Mesilla, " ..	Prep.
Uranga, Armando.....	16	Las Cruces, " ..	Prep.
Walker, Alvah	16	Denton, Tex..	Prep.
Wallace, Harry.....	20	Metcalf, Ariz..	Sp. Prep.
Wallace, Miriam Lapsley....	18	Clouderoft, N. M..	Sten.
Watkins, Lida Opal	18	Deming, " ..	Sten.
Weaver, Elmore Allen.....	18	Deming, " ..	Pr. Mech.
Welch, Mrs. Della May.....	26	Santa Rita, " ..	Prep.
Wylie, Frederick Tuttle	27	Las Cruces, " ..	Sp. Col.
Yoast, Mary Ella.....	14	Las Cruces, " ..	Prep.
Yoast Irvin Henry	17	Las Cruces, " ..	Prep.
Young, Donald Waddell.....	12	Las Cruces, " ..	Prep.

Total number of students, 207.

NOTE—The abbreviations showing the grade of the students mean: Col., College; Col. Sp., College Special; Sten., Stenography; Sp. Sten., Spanish Stenography; Pr. Mech., Practical Mechanics; Sp. Agric., Special Agriculture; Prep., Preparatory; and Sp. Prep., Special Preparatory.

TREASURER'S REPORT.

Report on Territorial Funds for the Period Beginning July 1, 1900,
and Ending Nov. 30, 1901.

Financial Statement No. 1. Territorial General Fund.

RECEIPTS.

From balance on hand (as per last annual report),	\$1,116 88
From Territory	6,600 97
From Matriculation and Tuition Fees.....	1,102 50
From Miscellaneous Fees.....	42 47
From Sales, Las Vegas Sub-station property.....	100 00
From Sales, Aztec Sub-station property..	120 00
From Las Vegas Sub-station fund.....	321 61
From Aztec Sub-station fund.....	405 66
	<hr/> \$9,810 09

DISBURSEMENTS.

For Salaries	\$4,851 46
For Music	56 50
For Building, Improvement and Repairs.	505 83
For Insurance	1,110 00
For Miscellaneous Expenses	455 06
For Text Books	50 12
For Student Labor	312 81
For Traveling Expenses	357 00
For Stationery, Printing and Advertising.	911 06
For Heat, Light and Water	166 50
For Girls' Dormitory	25 00
For Library	27 35
For Labor	339 80
For Furniture and Property	364 33
	<hr/> \$ 9,532 82
Balance on hand	<hr/> \$277 27

Financial Statement No. 2. Aztec Sub-station Fund.

**Receipts and Disbursements for the Period Beginning July 1, 1900,
and Ending Nov. 30, 1901.**

RECEIPTS.

Balance on hand, as shown by last annual report	\$114 70
From Territory	786 62
From Sale of Property	113 72
	<hr/> \$1,015 04

DISBURSEMENTS.

For Salary	\$500 00
For Labor	60 00
For Miscellaneous Expenses	49 38
Transferred to Territorial General Fund.	405 66
	<hr/> \$1,015 04

Financial Statement No. 3. Las Vegas Sub-station Fund.

**Receipts and Disbursements for the Period Beginning July 1, 1900,
and Ending Nov. 30, 1901.**

RECEIPTS.

Balance on hand, as shown by last annual report.....	\$ 173 21	
From Territory.....	786 62	
		\$ 959 83

DISBURSEMENTS.

For Salary.....	\$ 500 00	
For Miscellaneous Expenses.....	138 22	
Transferred to Territorial General Fund..	321 61	
		\$ 959 83

Financial Statement No. 4. Roswell Sub-station Fund.

**Receipts and Disbursements for the Period Beginning July 1, 1900,
and Ending Nov. 30, 1901.**

Balance on hand, as shown by last annual report.....	\$ 1,086 88	
From Territory.....	786 62	
From Rent Collected.....	139 50	
		\$ 2,013 00

DISBURSEMENTS.

For Drainage Experiment, salary etc....	\$ 112 50	
For Ditch Dues.....	7 20	
		\$ 119 70

Balance on hand... \$ 1,893 30

TERRITORY OF NEW MEXICO, } ss.
COUNTY OF DOÑA ANA.

L. Bradford Prince, President of the Board of Regents of the New Mexico College of Agriculture and Mechanic Arts, and Philip H. Curran, Secretary and Treasurer of the said Board of Regents, say that the foregoing financial statements do represent a true and correct statement of all moneys received and disbursed by and for the New Mexico College of Agriculture and Mechanic Arts, for and during the period

named and the purposes stated in said financial statements, and that properly signed vouchers are on file for all disbursements shown by said financial statements to have been made.

IN WITNESS WHEREOF, we have hereunto attached the seal of the said Board of Regents, and subscribed our names.

L. BRADFORD PRINCE,
President of the Board of Regents of the
New Mexico College of Agriculture
and Mechanic Arts.

[SEAL]

P. H. CURRAN,
Secretary and Treasurer of the Board of
Regents of the New Mexico College of
Agriculture and Mechanic Arts.

TWELFTH ANNUAL REPORT
OF THE
NEW MEXICO AGRICULTURAL EXPERIMENT STATION
for the year
1901-1902.

November 30, 1901.

To the Hon. Miguel A. Otero, Governor of New Mexico:

Sir: Pursuant to the third section of the Act of Congress of 1887 establishing Agricultural Experiment Stations, I have the honor to transmit to you in behalf of the Board of Regents of the New Mexico College of Agriculture and Mechanic Arts, as the Twelfth annual report of the Agricultural Experiment Station of New Mexico, the report of the Executive Officer in Charge, incorporating the reports of the several members of the Station Council, and the report of the Treasurer of this board.

Respectfully submitted,

P. H. CURRAN,
Secretary and Treasurer.

REPORT OF THE EXECUTIVE OFFICER IN CHARGE.

MESILLA PARK, N. M., November 30th, 1901.

To the Board of Regents of the New Mexico College of Agriculture and Mechanic Arts:

GENTLEMEN:—In accordance with authority and instructions given by you, I herewith submit the following report of the work and condition of the New Mexico Agricultural Experiment Station for the year ending June 30th, 1901, this report being prepared and submitted in the absence of any report left by the retiring Director. Dr. Frederic W. Sanders, whose connection with this Experiment Station ceased on June 30th last.

During the year the Station Staff has consisted of the following persons:

Frederic W. Sanders, Ph. D., Director

Arthur Goss, M. S. A. C., Vice Director, Chemist

T. D. A. Cockerell, Consulting Entomologist
E. O. Wooton, A. M., Botanist
J. D. Tinsley, B. S., Soil Physicist and Meteorologist, and
Superintendent of Roswell Sub-station
John J. Vernon, B. S. Agr., Agriculturist
W. M. Reed, C. E., Irrigation Engineer
Fabian Garcia, B. S., Horticulturist
R. F. Hare, M. S., Assistant Chemist
Alfred M. Holt, M. S., Second Assistant Chemist
Joseph F. Bennett, Jr., M. S., Assistant Botanist
Francis E. Lester, Registrar
Helen M. Macgregor, Stenographer

Charles E. Mead, B. S., Superintendent San Juan Sub-Station, Aztec, N. M.

John Thornhill, Superintendent Las Vegas Sub-Station, East Las Vegas, N. M.

Mr. Charles E. Mead and Mr. John Thornhill, superintendents respectively of the Aztec and Las Vegas Sub-stations, ceased to occupy such positions with the abolition of the Territorial Sub-stations on May 1st, 1901, in accordance with action taken by the last Territorial legislature, in section 9 of chapter 90 of the Acts of the 34th Legislative Assembly. Mr. W. M. Reed, whose name appears as Irrigation Engineer of this Experiment Station for the past year did not perform any duties in that position, and received no salary, the arrangements which were made with the authorities to secure his services in such capacity having fallen through.

For the present year, commencing July 1st, 1901, the Station Staff remains the same, except for the following changes: Francis E. Lester served as Executive Officer in Charge of the Experiment Station in the absence of a regularly elected Director, until December 1st, when Professor Luther Foster, who was elected on November 21st, 1901, by the board of regents of this institution as director of the Experiment Station, takes charge of his position. John D. Tinsley as-

sumes the duties of vice director in place of Arthur Goss, who formerly filled that position. T. D. A. Cockerell and W. M. Reed are no longer connected with the Experiment Station, and the positions of Second Assistant Chemist, formerly occupied by A. M. Holt, and the position of Assistant Botanist, formerly occupied by J. F. Bennett, have been abolished.

During the past year the following bulletins have been published and distributed by the Experiment Station:

No. 35. Observations on Insects, by T. D. A. Cockerell.

No. 36. Announcement to New Mexico Ranchmen and List of Bulletins, by Frederick W. Sanders.

No. 37. Notes on the Food of Birds, by T. D. A. Cockerell.

No. 38. Soil and Soil Moisture Investigations for the Season of 1900, by J. D. Tinsley and J. J. Vernon.

No. 39. Orchard Notes, by Fabian Garcia.

Additional to these bulletins, press bulletins have been issued regularly throughout the year to the press of the territory, and have been very generally printed. They have treated of timely and interesting topics of importance to the work of the farmers and horticulturists of the territory.

The detailed reports from the various departments of the Experiment Station, which are appended hereto, show the progress and the character of the work of the station during the past year. There is but little to be added to these reports in connection with the work of the station. The Agricultural Department has received additional equipment, and its work has been materially strengthened. It is now in a better condition, and is more nearly meeting the demands in this territory, than ever before. Numerous trips have been made by station officers throughout the year to investigate important matters connected with the work of the Station in different parts of the territory. Towards the close of the year arrangements were made to undertake a thorough investigation of the best methods of irrigating from wells. With the beginning of the present year these arrangements have been followed and the work enlarged. The question is one of much import-

ance to the arid regions, and is arousing much interest throughout this territory and neighboring localities.

Below is appended a complete list of the Station bulletins issued to date, showing those still available for distribution; also a list of those periodicals which are being sent gratuitously to the Station and for which grateful acknowledgment is hereby made.

LIST OF BULLETINS

The following bulletins have been issued from the Experiment Station, and, with the exception of those marked with an asterisk, will be sent free of charge to all persons in New Mexico who apply for them:

*No. 1, April, 1890—General Information.

*No. 2, October, 1890—Outline of Plans of Experimentation.

No. 3, June, 1891—Preliminary Account of Some Insects Injurious to Fruit—C. H. Tyler Townsend.

No. 4, March, 1892—Fruit Trees, Forest and Shade Trees, Nut-bearing Trees, and Vegetables—A. E. Blount.

No. 5, March, 1892—Notices of Importance Concerning Fruit Insects—C. H. Tyler Townsend.

No. 6, March, 1892—Cereals, Forage Plants, Grasses, Clovers, Textile Plants, and Sorghums—A. E. Blount.

No. 7, June, 1892—Scale Insects in New Mexico—C. H. Tyler Townsend.

*No. 8, November, 1892—Wheat, Oats, Barley, Rye, Sugar Beets, Sorghum, Cañaigre, etc.—A. E. Blount.

No. 9, May, 1893—Insecticides and their Appliances—C. H. Tyler Townsend.

No. 10, September, 1893—Insects of 1893—T. D. A. Cockerell.

*No. 11, October, 1893—Notes on Cañaigre and Meteorological Data—A. E. Blount and Harvey H. Griffin.

No. 12, November, 1893—The Value of Rio Grande Water for the Purpose of Irrigation—Arthur Goss.

*The editions of these Bulletins is exhausted.

No. 13, New Mexico Weeds, No. 1—E. O. Wooton.

No. 14, Cañaigre—A. E. Blount.

No. 15, Entomological Observations in 1894; Life Zones in New Mexico; Entomological Diary at Santa Fé—T. D. A. Cockerell.

No. 16, September, 1895—The Russian Thistle—E. O. Wooton.

No. 17, December, 1895—Principles of Stock Feeding and Some New Mexico Feeding Stuffs—Arthur Goss.

No. 18, March, 1896—Some New Mexico Forage Plants—E. O. Wooton.

No. 19, April, 1896—Report of the Entomologist (Part I.)—T. D. A. Cockerell.

No. 20, December, 1896—Seeds—George Vestal.

No. 21, January, 1897—Results of Experiments at San Juan Sub-Station—H. H. Griffin.

No. 22, March, 1897—Alkali in the Rio Grande and Animas Valleys—Arthur Goss and H. H. Griffin.

No. 23, April, 1897—Sugar Beets—Cornelius T. Jordan.

*No. 24, August, 1897—Life Zones in New Mexico—T. D. A. Cockerell.

No. 25, February, 1898—Preliminary Notes on the Codling Moth—T. D. A. Cockerell.

No. 26, June, 1898—New Mexico Sugar Beets—Arthur Goss.

No. 27, June, 1898—Report on Plums—George Vestal and Fabian Garcia.

*No. 28, December, 1898—Life Zones in New Mexico, No. 2—T. D. A. Cockerell.

No. 29, May, 1899—New Mexico Sugar Beets—Arthur Goss and A. M. Holt.

No. 30, May, 1899—The Effect of Spring Frosts on the Peach Crop; With Cultural Notes on the Peach in New Mexico—Fabian Garcia.

No. 31, December, 1899—A Study of Soil Moisture—Charles A. Keffer and John D. Tinsley.

* The edition of these Bulletins is exhausted.

No. 32, December, 1899—Grasses and Forage Crops—Charles A. Keffer.

No. 33, April, 1900—Notes from the San Juan Sub-Station—Charles E. Mead.

No. 34, June, 1900—Principles of Water Analysis as Applied to New Mexico Waters—Arthur Goss.

No. 35, October, 1900—Observations on Insects—T. D. A. Cockerell.

No. 36, October, 1900—Announcement to New Mexico Ranchmen and List of Bulletins.

No. 37, March, 1901—Notes on the Food of Birds—T. D. A. Cockerell.

No. 38, May, 1901—Soil and Soil Moisture Investigations for 1900—J. D. Tinsley and J. J. Vernon.

No. 39, June, 1901—Orchard Notes—Fabian Garcia.

Respectfully submitted,

FRANCIS E. LESTER,

Executive Officer in Charge.

**List of Periodicals Sent Gratuitously to the New Mexico Agricultural
Experiment Station**

Agricultural Advertising

Agricultural Epitomist

Agricultural Experiments

American Cultivator

American Grange Bulletin and Scientific Farmer

American Stock Farm

Beet Sugar Gazette

Chicago Daily Drivers' Journal

Dairy

Dairy and Produce Review

Elgin Dairy Report

Farm and Fireside

Farm and Ranch

Farmers' Advance

Farmers' Call

Farmers' Guide
Farm Home
Farmers' Review
Farm, Stock and Home
Farmers' Voice and National Rural
Indiana Farmer
Journal of Agriculture
Kansas Farmer
Live Stock Report
Louisiana Planter
Louisiana Planter and Sugar Manufacturer
Mirror and Farmer
Modern Farmer and Busy Bee
Monthly Post
Nebraska Farmer.
Ohio Farmer
Poultry Monthly
Review, The
Southern Farm Magazine
Successful Farmer
Up-to-date Farming and Gardening
Western Farmer and Breeder
West Virginia Farm Review
Wisconsin Agriculturist

REPORT OF THE AGRICULTURIST.

July 1, 1901.

Francis E. Lester, Executive Officer in Charge:

SIR:—I have the honor to submit the following report of the work of this department for the fiscal year ending June 30, 1901.

The summer and fall of 1900 was exceptionally dry; there was practically no water in the river for irrigation from June 17 to Nov. 28. Nearly all the crops suffered because of the shortage in the water supply. Alfalfa and sorghum did the best of all forage crops. Oats may be mentioned next in the list. Corn made little more than stover.

The varieties of sorghum received from the Government proved very drought-resisting. The results indicated that if sorghum is planted early, so as to become well rooted before the drought sets in, a large amount of forage may be expected, even under very droughty conditions later in the season.

The experimental work in Soil Moisture for the year of 1900, which was carried on in cooperation with the Department of Soil Physics, has been completed and published in Bulletin No. 38.

A variety test of wheat was made, with the purpose in view of selecting from several hundred varieties on hand a few of the most promising, the inferior and worthless varieties to be discarded. It is intended to grow the best varieties in quantities sufficient for future distribution over the territory.

Preliminary feeding experiments were conducted with dairy cows to determine the relative value of available feeds.

The following tests were abandoned owing to shortage of water for irrigation: Variety test of Northern-grown corn; method of planting corn, and amount of sorghum best to sow per acre.

The thoroughbred stock purchased early in the summer was brought in after the weather became cool. They arrived in good condition and became acclimatized and adapted to our feeds without difficulty.

One half of the corral building planned and begun by my predecessor, Prof. Chas. A. Keffer, was completed. Much improvement was made during the year in the ditch systems and bridges and substantial additions were made to the equipments.

The writer attended the Territorial Fair, at Albuquerque, in September. This afforded an opportunity for looking over some of the leading dairy farms and market gardens in the immediate vicinity. The writer also attended, as a delegate from this college and station, the meeting of the Association of American Agricultural Colleges and Experiment Stations, held at New Haven, Conn., Nov. 13 to 16, and on the return

trip stopped over in Chicago and attended the meetings of the National Good Roads Congress, and the National Irrigation Congress, Nov. 21 to 25. The ranges in and about the Organ Mountains were visited in company with Mr. Shears, Government expert in grasses, and Professors Wooton and Tinsley of this station. Other trips have been made in connection with a study of the conditions of the territory.

The spring of 1901 has been very favorable for plant growth. There has been ample water supply for all purposes up to the present date and much valuable data is expected from the results of the season's work.

We wish to make grateful acknowledgment of the following donations which have been received by this department during the fiscal year:

West Disinfecting Co., N. Y., Ten gallons Chloro-Naphtholeum Dip.

Iowa Seed Co., Des Moines, Ia., One pkt. each of the following varieties of corn: Pop corn.—Miniature, Page's Striped Rice, Queen's Golden, Monarch White Rice, and Mapledale Prolific. Sweet corn.—Mammoth Sugar, Early Minnesota, Champion Early, Extra Early Corby, and Crosby's Early. Field corn.—Giant Mexican June, Silver Mine, Early Longfellow Dent, Iowa Gold Mine, and Primitive, or Husk.

The Mead Hay Press Co., Pueblo, Colo., One Ditch Stop or Irrigation Dam.

Hallock Weeder and Cultivator Co., York, Penna, One Hallock Weeder and Cultivator.

Very respectfully submitted,

J. J. VERNON.

REPORT OF THE HORTICULTURIST.

Nov. 30, 1901.

Francis E. Lester, Executive Officer in Charge:

SIR:—Permit me to submit herewith a report of the work of the Division of Horticulture, Department of Agriculture and Horticulture, during the fiscal year ending June 30, 1901.

Much of the work has been a continuation, and in some cases the completion, of experiments started before the beginning of the year. Also, some new lines of work have been inaugurated, such as a variety test of small fruits and vegetables, cultural methods of vegetables, growing lettuce and radishes in cold frames for winter, spraying to retard the blooming of fruit trees, spraying and banding trees for the codling moth, etc.

I. *Fruit.* (1). Observations of the blooming and ripening period of the orchard fruits were continued. During the season of 1900 more varieties of the different fruits bore a crop than for any other year since the orchard was planted. Almost all of the Japanese plums in the test, which, as a rule, fail to ripen any fruit on account of the blooms and young fruit being destroyed by the late spring frosts, as well as many varieties of late peaches which had not fruited before (due to the same reason), bore a crop. The reason so many of these varieties of fruit produced a crop was on account of the very favorable spring of 1900. On the other hand, the spring of 1901 was very severe on the fruit crop, resulting practically in a complete failure of the peaches, apricots, Japanese and earlier blooming varieties of the native and European plums, as well as in the earlier blooming pears. The apple and grape crops were not hurt.

(2). The observations on the effect of severe pruning of old peach trees have been finished.

(3). The preliminary experiment in the thinning of plums has been completed, and the results of these two experiments have just been published in Station Bulletin No. 39.

(4). The experiment started in the spring of 1900 in spraying for the codling moth was materially extended this spring. The best time to spray, number of sprayings, and a test of different insecticides are some of the new features added to the experiment. Aside from this, the department has started a cooperative spraying experiment for the codling moth with Mr. Frank Burke of La Mesilla, who owns a large apple orchard.

(5). An experiment in white-washing plums, late peaches, and apricots with a view of retarding the blooming period was conducted during the winter. The observations show that, while the white-washed trees, in most cases, were retarded in their blooming period, yet the difference was too small to be of any practical value. In the case of late peaches and Japanese plums it seems necessary that white-washing, to do any good, should retard the blooming at least a week. Frequently, killing frosts occur a week after the trees are out in full bloom. In this experiment there was not more than two or three days' difference in the blooming between the untreated and the treated trees.

(6). During the summer of 1900 much fruit for exhibition purposes was preserved in formalin. Most of this fruit was exhibited at the Territorial Fair at Albuquerque in September, at the Horticultural Fair at Santa Fe in October, and at the Mid-Winter Carnival in El Paso, Texas, in January, 1901. Also, a large quantity of the peaches and plums was sold in the Territory through Mr. F. C. Barker, secretary of the Mesilla Valley Fruit Growers' Shipping Association. This was the first year that much of the fruit was sold.

(7). The experiment begun in the spring of 1900 with the view of studying the effect of the heavy cultivation of fruit trees without irrigation was continued during the summer.

(8). While the spring of 1900 was very favorable, the summer and fall were very dry and the trees and late fruit suffered considerably. The water in the acequia gave out about July 1st, and it was not until Sept. 12th that water for irrigation again came. At this time the orchard was heavily irrigated, which stimulated a vigorous tree growth; and in the case of some varieties of pears that had practically stopped growing during the dry part of the season, the irrigation caused the trees to bloom out. The water supply during the early summer of 1901 has been very plentiful for irrigation.

(9). There are a number of trees dying in the orchard. On the whole, the peach trees, especially, are rapidly on the decline. The reason given for the peach trees dying, as they

are, is the lack of water. Examination of the roots of the peach trees show that they do not go down deeply into the soil but, instead, they grow along the surface not much more than a foot in depth. During the long periods in summer that the trees have to go without water, the soil dries down to a considerable depth and the roots are then in dry soil. Thus the roots are unable to supply the tree tops with the necessary amount of moisture and plant food to keep the tree growing vigorously. If this condition is repeated many times the tree soon begins to decline.

(10). A variety test of small fruits has been started. Twenty varieties of strawberries donated to the station by Joseph Vestal & Son, Little Rock, Ark., were set out on ridges in February, and started out well. Some of them bloomed in the spring and a few fruited the same season. About fifteen more varieties of foreign grapes have been added to the list in the new vineyard.

II. *Vegetables.* (1). A variety test of twenty varieties of cabbage was begun this spring; also, a trial of ridge and plat culture with the same varieties. The germination of the seed on the ridges was somewhat quicker and more uniform than on the plats. The plants during the early part of the season made a better growth on the ridges. Later in the season, however, when there was no water to irrigate regularly, the plants on the plats grew the best. On the whole, vegetable seeds germinate better on ridges than in plats, and if plenty of water can be had to irrigate regularly, the ridge culture is preferred.

(2). A preliminary experiment with the onions grown in the field and those transplanted from cold frame was begun. Also, a variety test of chili, tomatoes and beans. Almost all of the beans failed to germinate.

(3). A test of twenty varieties of early corn has been started. All the varieties, except the Apache, a Mexican corn, came from Barteldes & Co., Denver, Colo.

(4). Most of the imported vegetable seeds sent to the station for trial by the Department of Agriculture were planted

this spring. There were six varieties of Broccoli, two of Caper, one of Terebinth and six of Fennel. All but the Caper and Terebinth germinated well. There were, also, fifty-two varieties of musk-melons and twenty-two of watermelons planted late in May. A few of these varieties failed to germinate; probably the seed was too old.

(5). Twenty varieties of sweet potatoes obtained from Arkansas and two from the valley were set out May 25th, 1901. The plants received from Arkansas were fresh and green when they came and were immediately planted out. At the same time the two kinds from the valley were set out and all were treated alike. About 80 per cent. of the plants of the varieties from Arkansas died, and only about 5 per cent. of the home-grown failed to grow. This experiment indicates the advantage of planting home-grown plants.

(6). During the summer of 1900 the squash bug (*Anasa tristis*) and the cucumber beetle of the genus *Brabrotica* were very bad on the musk-melons, and some work was done in trying to drive away the insects by the use of tobacco, lime and ashes.

(7). A preliminary experiment in winter-grown radishes and lettuce in cold frames covered with glass sashes was conducted. The radishes and lettuce grew well all winter. Of the eight varieties of lettuce grown, the Grand Rapids and Black-seeded Simpson grew the fastest and were the ones people most preferred.

III. *Forest Trees.* (1). The treatment of the forest plantation has been the same as for the previous year. The trees have made a fairly good growth and only to a limited extent have they shown the effect of the drought of last summer. The black locust has made the largest growth; the box elder and mulberry are second, while the catalpa, elm, ash, and honey locust have made the least growth respectively. The forest trees are now of such size that it is quite difficult to cultivate them with a horse cultivator.

IV. *Ornamental Trees, Shrubs, etc.* (1). The testing of new ornamental trees, shrubs and flowers has been continued.

All the arbor vitae, Retinospora and red cedar (*Juniperus Virginiana*) continue to grow well. The *Cedrus deodora* deserves special mention in this connection as it is doing *very* well and seems to be well adapted to our conditions. A new hedge of arbor vitae has been set out to the north of the agricultural building.

(2). The violet bed was enlarged last fall by planting out plants from the runners of the old plants. The plants in the cold frame did well and bloomed profusely by the last of December, 1900. It was demonstrated last summer that violets will grow and bloom well in this climate.

(3). Fall planting of such hardy annuals as sweet peas, poppies, centaurias, etc., as against spring planting was tried. On the whole, the fall planting gives the best results.

V. *Miscellaneous*. (1). During May and June a test of a lantern, a codling-moth catcher, was made. The lantern was submitted to the department for trial by Mr. F. C. Barker of Las Cruces, N. M. Many moths were attracted to it, but not a codling moth was ever found among the many other moths caught by the lantern.

(2). The writer spent four days in October in charge of the college and station exhibit at the Horticultural Fair at Santa Fe. Five days in May were spent on the Mimbres Valley, Grant County, inspecting the orchards of that place for insects. The Bryobia mite was found to be quite common, while the scale was found in only limited numbers. Some of the orchards are being affected by a powdery mildew, (*Podosphaeria oxycantheae*), which, if not checked, may do some damage to the apple crop.

(3). Two weeks in June were spent with Prof. T. D. A. Cockerell at Las Vegas, in entomological work. Four insect cases of injurious and beneficial insects were worked over and are now in the department for reference.

(4). The following bulletins have been issued during the year:

Press Bulletin on Japanese plums, Nov. 14, 1900;

“ “ “ European plums, Dec. 3, 1900;

Press Bulletin on Evergreens, Feb. 28, 1901;

“ “ “ Spraying for the Codling Moth, April 24, 1901.

Station Bulletin No. 39 for May, 1901, on Orchard Notes.

Respectfully submitted,

FABIAN GARCIA.

Report of the Chemist

November 30, 1901.

Francis E. Lester, Executive Officer in Charge:

SIR:—The following is a brief summary of the work of the chemical department of the experiment station from June 30, 1900, to July 1, 1901.

The sugar beet work carried on in this department for several years past was continued during the season of 1900, at the central station and at the sub-stations at Las Vegas and Aztec. As heretofore, the result of the Aztec sub-station were remarkable high. The Animas valley is undoubtedly well adapted to the production of sugar beets, at least so far as the composition is concerned.

The results from the station at Mesilla Park were about the same as in previous years, being considerably less encouraging than those from San Juan county and other places in the northern portion of the territory. The results at Las Vegas, as usual, stand between those from Mesilla Park and Aztec.

Below are given the average results for 1900 from the station farm at Mesilla Park, and the sub-stations of Aztec and Las Vegas:

Where Grown.	No. of Sample.	Lbs. Wgt. Average.	Juice. per ct. sug.	Juice. per ct. sug.	Purity.
Mesilla Park.....	6	1.10	12.45	11.83	69.1
Las Vegas.....	5	1.13	16.44	15.62	81.5
Aztec.....	6	1.32	20.45	19.43	87.1

The work on the water supply of the territory, carried on for a number of years past, has also been continued. The principal results secured in this connection since the investigation was started were published within the time covered by this report in Bulletin No. 34.

During the year a considerable number of samples of bat guano from caves in different parts of the territory have been analyzed. Some of these deposits, as those near Lava, have proven to be of considerable commercial importance. Several hundred tons of high grade fertilizing material have been shipped from the Lava deposits and there is still probably several thousand tons left.

As usual, a considerable number of samples of miscellaneous substances have been analyzed during the year. These have included ores, fertilizers, asphaltum, natural saline deposits, etc. In all, 229 samples were analyzed within the time covered by this report as compared with 189 for the year previous.

The equipment for the department during the year has been fully maintained but not materially increased, with the exception of a number of books of reference which were added to the library.

Very respectfully submitted,

ARTHUR GOSS,

Report of the Botanist

November 30, 1901.

Francis E. Lester, Executive Officer in Charge:

SIR:—A series of experiments on the growing of native grasses under irrigation was established in connection with the agricultural department. The bulk of the work on these experiments was done by that department and the report of results will be found under the special report of the Agriculturist. It might be in place to say here that the results were not as favorable as were desired, considering the necessity of a good pasture grass.

During the year some data concerning the methods of governing arid pasture lands were collected, as well as considerable information about the distribution of our native grasses in the southern part of the territory. The botanist has now visited a large part of southern New Mexico and is fairly conversant with the condition of its ranges, and he has

in hand work of importance to the cattle-raising industry.

While acting for the U. S. Bureau of Forestry during the past two summers the botanist has visited and traveled over two of the largest timbered areas of the territory and studied carefully the kind, distribution, and to a degree, the density of New Mexico's timber. These areas have been mapped and numbers of photographs of the native forest trees have been made, and some investigations as to how to make our forests more profitable are under way. The necessity of preserving them is one which can hardly be too strongly advocated. It is already too late to save the best of our forests in the Sacramento Mountains.

The work on the herbarium has been continued with ordinary success. Another year of such work as that of the past will put the herbarium in good working condition. The wisdom of collecting this herbarium becomes more evident each year.

Respectfully submitted,

E. O. WOOTON.

Report of the Soil Physicist and Meteorologist.

July 1, 1901.

Francis E. Lester, Executive Officer in Charge:

SIR:—I beg leave to submit the following report on the work done in the department of soil physics and meteorology between July 1, 1900, and June 30, 1901.

The work has been along the following lines: Soil moisture and general soil studies, alkali and drainage, meteorology and miscellaneous work.

SOIL MOISTURE AND GENERAL SOIL STUDIES.

The experiments on soil moisture, in cooperation with the agricultural department, begun in the spring of 1900, were continued until the crop was harvested. Moisture determinations were made on each of the twelve plats both by the gravimetric method and by the electrical method. Mechanical analyses, water holding power and porosity deter-

minations were made on a number of samples from these plats.

Considerable work was done in studying methods for determining the water holding power of soils.

The laboratory was equipped during the summer and fall with a shaker, Pelton water motor, centrifuge and other apparatus necessary for making mechanical analyses of soils. The results of this work were published in Bulletin No. 38.

In the spring of 1901, in cooperation with the agricultural department, the moisture experiments were begun for the third season. It was deemed advisable to locate the plats in a different place, so a piece of land was selected on the north-east side of the farm, and was divided into twenty plats instead of twelve as heretofore. This land was examined and the extent and thickness of the various textures was mapped. These textures will be studied in detail, especially in regard to their mechanical structure, water holding power, salt content, etc. Forty sets of electrodes were installed and read twice each week, and were standardized once a month gravimetrically. The moisture in each plat was also determined gravimetrically, twice each month at depths of 0-6, 6-12 and 12-24 inches.

ALKALI AND DRAINAGE.

This work was a continuation of the experiment begun in the spring of 1900, on the sub-station farm at Roswell, N. M. The months of July and August were spent at Roswell, the trip to and from there being made overland. This gave an opportunity for becoming familiar with the valleys of the Rio Ruidoso, Hondo, and Penasco, as well as the grazing country along the route.

This experiment consisted in studying the effect of tile drains on the water table, and the effects of frequent heavy irrigations on the salt content of the drained land. The results were quite satisfactory, the tile drains lowered the water table to their own level, and the washing decreased the amount of salt in the first two feet of the soil very perceptibly.

A number of the farms in the vicinity were visited, the

soils tested and advice given in regard to the improvement of the land. The farmers are showing a very gratifying interest in the drainage and alkali work, and it should be continued if funds can possibly be made available. A set of samples of soil and water were sent to the department for an opinion on their quality from a locality which had not been cultivated. The sender proposed to do considerable work in building ditches and getting this land in cultivation. Examination showed both the soil and water to contain a considerable quantity of sodium carbonate (black alkali), and he was, therefore, warned against trying to utilize this area. Some work was done on methods for determining the constituents of alkali in the field.

METEOROLOGY.

The usual observations on temperature, barometer, rainfall, state of sky, evaporation, etc., have been taken and recorded.

MISCELLANEOUS.

An exhibit from this department was prepared and sent, as part of the general exhibit, to El Paso for the carnival in January, 1901.

A general study of the soil was made for the horticultural department, and a profile map was prepared showing the extent and thickness of the various textures of soil found.

The usual routine correspondence relating to this department has received the necessary attention.

The head of this department, being also station librarian, has had the duplicate publications on hand assorted and arranged in an accessible condition in the attic of the science hall. He has also assisted the general librarian in the preparation of a file of experiment station bulletins for the library.

I, wish, in conclusion, to commend Mr. Sanchez, student assistant in this department, for the careful attention which he has given to the work, especially in my absence. He has also taken the weather observations and prepared the records.

Respectfully submitted,

J. D. TINSLEY.

Report of the Consulting Entomologist

Francis E. Lester, Executive Officer in Charge:

SIR:—During the year two bulletins were issued from my department, No. 35, October, 1900, entitled *Observations on Insects*, and No. 37, March, 1901, *Notes on the Food of Birds*. In these two publications will be found reported most of the work done in my special capacity of Consulting Entomologist, although this is but a small part of the entomological work carried on during the year. In September I visited Cloudcroft in the Sacramento mountains, principally for the purpose of investigating the cause of the failure of the potato crop, the results of this trip are narrated in bulletin 35, p. 15.

In October studies were made of certain injurious insects at Raton, and photographs taken illustrating the character of damages. The opportunity has not been found to publish these, although engravings were prepared.

A special study of a new pest of pine-trees at Las Vegas has also never been fully reported on, though a brief account has appeared in *Entomological News*.

A considerable amount of work was done on the collections, as in previous years. A special collection of injurious and beneficial insects was prepared for the department of horticulture.

Respectfully submitted,

T. D. A. COCKERELL.

TREASURER'S REPORT.

Agricultural Experiment Station of the New Mexico College of Agriculture and Mechanic Arts

In Account With

The United States Appropriation, 1900-1901

Dr.

To receipts from the Treasurer of the United States as per appropriation for fiscal year ending June 30, 1901, as per act of Congress approved March 2, 1887..... \$15,000 00
(\$14,998.90 and \$1.10 balance from 1899-1900.)

Cr.

By Salaries.....	1.....	7,500 04
Labor.....	2.....	2,040 29
Publications.....	3.....	565 83
Postage and stationery.....	4.....	408 77
Freight and express.....	5.....	243 97
Heat, light, water and power.....	6.....	62 65
Chemical supplies.....	7.....	57 06
Seeds, plants and sundry supplies...	8.....	304 28
Fertilizers.....	9.....	45 00
Feeding stuffs.....	10.....	450 70
Library.....	11.....	80 12
Tools, implements and machinery...	12.....	756 25
Furniture and fixtures.....	13.....	356 83
Scientific apparatus.....	14.....	287 07
Live stock.....	15.....	281 20
Traveling expenses.....	16.....	489 90
Contingent expenses.....	17.....	320 04
Buildings and repairs.....	18.....	750 00
Balance.....		

Total.....\$15,000 00

To receipts from other sources than the United States for the year ended 1900-1901:

Farm products.....\$466 51

Fees.....5 30

Dr. 471 81

By building and repairs.....Cr. 471 81

We, the undersigned, duly appointed Auditors of the Corporation, do hereby certify that we have examined the books and accounts of the New Mexico Agricultural Experiment Station for the fiscal year ending June 30, 1901; that we have found the same well kept and classified as above, and that the receipts for the year from the Treasurer of the United States are shown to have been \$15,000.00, and the corresponding disbursements \$15,000.00; for all of which proper vouchers

are on file and have been examined by us and found correct, thus leaving no balance on hand.

And we further certify that the expenditures have been solely for the purposes set forth in the Act of Congress approved March 2, 1887.

[SEAL]

P. H. CURRAN, }
H. B. HOLT, } Auditors.

Attest: F. E. LESTER,
Custodian.

MORRILL REPORTS FOR

1900-1901

Eleventh Annual Report of the President of the College and the Treasurer
of the Board of Regents to the Secretary of the Interior and the
Secretary of Agriculture, under Act of Congress of
August 30, 1890

Morrill Fund

For the Endowment of Colleges of Agriculture and Mechanic Arts

REPORT OF THE PRESIDENT OF THE COLLEGE

*I. Condition and Progress of the Institution for the year ended
June 30th, 1901:*

(1). The courses of instruction during the past year have been practically the same as formerly, excepting a few minor changes intended to strengthen the work. The standard of scholarship in the college has been raised. The agricultural course is now a strong and attractive one.

(2). No new buildings have been erected. The farm corral, begun and built last year, has received more additions.

II. Receipts for and during the year ended June 30th, 1901:

1. Balance on hand July 1, 1901.....\$ 1,116 88
2. State aid :
 - a. Income from endowment granted by state,
 - b. Appropriation for current expenses..... 4,376 10
 - c. Appropriations for building or for other special purposes
3. Federal aid :
 - a. Income from land grant, act of July 2, 1862.....
 - b. Income from other land grants.....
 - c. Additional endowment act of Aug. 30, 1890. 25,000 00
 - d. For experiment stations, act March 2, 1897. 15,000 00
 4. Income from endowment other than federal or state grants.....
5. Fees and all other sources :
 - Tuition fees.....\$1,102 50
 - Incidental fees..... 42 47

Miscellaneous receipts.....	571 81	1,716 78
		<hr/>
		\$ 47,209 76

III. *Expenditures for and during the year ended June 30th, 1901.*

1. Instruction in the subjects specified in act of August 30, 1890.....	\$ 25,000 00
2. Instruction in all other subjects, if any, not mentioned in Question 1 of this series....	1,220 00
3. Administrative expenses (president's, secretary's, treasurer's, librarian's salary, clerical service, fuel, light, etc.).....	5,618 43
4. For buildings and repairs.....	186 08
5. Experiment Station.....	15,000 00
	<hr/>
Total.....	\$ 47,024 51

IV. *Property, year ended June 30th, 1901:*

Value of buildings, \$44,700.00; of apparatus, \$15,200.00; of machinery, \$18,600.00; of library, \$11,200.00; of other equipment, \$7,200.00. Value of above property (an estimate only is expected) not used for instruction in the subjects specified in section 1 of act of August 30, 1890: Buildings, \$12,400.00; of other equipment, \$5,000.00.

Total number of acres in farm and grounds, 270; acres under cultivation, 100; acres used for experiments, 75; value of farm and grounds, \$7,000.00.

Number of bound volumes in library, June 30, 1901, 9000; pamphlets, 3500.

V. *Faculty during the year ended June 30th, 1901:*

1. College of Agriculture and Mechanic Arts:		
	Male	Female
a. Preparatory classes.....	1	3
b. Collegiate and special classes.....	17	4
	<hr/>	<hr/>
c. Total, counting none twice.....	18	7
2. Number in all other departments (avoiding duplication)	0	0
3. Number of staff of experiment station.....	12	1

VI. *Students during the year ended June 30th, 1901:*

1. College of Agriculture and Mechanic Arts:

	Male	Female
a. Preparatory classes.....	106	34
b. Collegiate classes.....	15	17
c. Post-graduate courses.....	1	
d. Short or special courses.....	4	9

Total, counting none twice,..... 125 60

2. Number in all other departments, none.

3. Number of students that pursued courses in agriculture, 1; mechanical engineering, 4; civil engineering, none; electrical engineering, none; mining engineering, none; chemical engineering, none; textile industry, none; architecture, none; household economy, none; veterinary science, none; dairying, none; military tactics, none.

4. How many students graduated during the year ended June 30th, 1901? Men, 2; women, 2.

5. Average age of students graduated during year ended June 30th, 1901, 21.

6. What degrees and how many of each kind were conferred in 1900-1901? On men, Bachelor of Science, two; Master of Science, one. On women, Bachelor of Science, two.

7. What and how many honorary degrees were conferred in 1900-1901? None.

(Signed)

FREDERIC W. SANDERS,
by

FRANCIS E. LESTER,
Executive Officer in Charge.

Date: November 30, 1901.

REPORT OF THE TREASURER

RECEIPTS

Balance on hand July 1, 1900..... “

Date of receipt of installment for 1900-01, August

8, 1900.....\$ 25,000 00

Total available for the year ended June 30, 1901.\$ 25,000 00

DISBURSEMENTS

Agriculture:

1. For salaries of instructors:		
J. J. Vernon.....	\$	700 00
Fabian Garcia.....		480 00
2. For facilities as follows:		
Text books and reference books.		52 10
Apparatus, machinery, stock & material.....		63 60
Total.....	\$	1,295 70

Mechanic Arts:

1. For salaries of instructors:		
Frank W. Brady.....	\$	1,800 00
Charles Mills.....		1,200 00
Francis E. Lester.....		1,200 00
Archie B. Sage.....		720 00
R. R. Larkin.....		500 00
Florence G. Thornton.....		150 00
Helen M. Macgregor.....		300 00
2. For facilities as follows:		
Text books and reference books.		151 20
Apparatus, machinery, stock & material.....		989 97
Total.....	\$	7,011 17

English Language:

1. For salaries of instructors:		
F. F. Barker.....	\$	1,300 08
Florence G. Thornton.....		600 00
R. R. Larkin.....		300 00
Geraldine Combs.....		300 00
Charlotte A. Baker.....		200 04
2. For facilities as follows:		
Text books and reference books.		1,092 52
For apparatus, machinery, stock and material.....		54 07
Total.....	\$	3,846 71

Mathematical Science:

1. For salary of instructors.....:		
Clarence T. Hagerty.....	\$	1,800 00
R. R. Larkin.....		200 00
L. L. Brown.....		600 00
Geraldine Combs.....		200 00
2. For facilities as follows:		
Text books and reference books.		34 20
Apparatus, machinery, stock & material.....		56 10
Total.....		\$ 2,890 30

Natural and Physical Science:

1. For salaries of instructors:		
Elmer O. Wooton.....	\$	1,200 00
Joseph F. Bennett, Jr.....		600 00
Arthur Goss.....		600 00
R. F. Hare.....		1,100 04
John D. Tinsley.....		250 00
R. R. Larkin.....		300 00
Geraldine Combs.....		100 00
L. L. Brown.....		150 00
2. For facilities as follows:		
Text books and reference books.		336 60
Apparatus, machinery, stock & material.....		723 38
Total.....		\$ 5,360 02

Economic Science:

2. For salaries of instructors:		
Frederic W. Sanders.....	\$	1,500 00
Hiram Hadley.....		1,680 00
Alice Horning.....		700 00
R. R. Larkin.....		200 00
Geraldine Combs.....		150 00

2 For facilities as follows:

Text books and reference books.	242 65
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Apparatus, machinery, stock & material.....	123 45
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Total.....	\$ 4,596 10
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Total expended during the year..	\$ 25,000 00
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Balance remaining unexpended	
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July 1, 1901.....
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I hereby certify that the above account is correct and true, and, together with the schedules hereunto attached, truly represents the details of expenditures for the period and by the institution named, and that said expenditures were applied only to instruction in agriculture, the mechanic arts and the English language, and the various branches of mathematical, physical, natural and economic science, with special reference to their applications in the industries of life, and to the facilities for such instruction.

(Signed)

P. H. CURRAN,
Treasurer.



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